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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,656	04/08/2004	David K. Gong	50657-00004USPT	8010

51738 7590 02/21/2006

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EXAMINER	
ALSTRUM ACEVEDO, JAMES HENRY	

ART UNIT	PAPER NUMBER
1616	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/820,656	GONG ET AL.	
	Examiner	Art Unit	
	James H. Alstrum-Acevedo	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/19/05 & 7/22/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-28 are pending. Acknowledgement is made of receipt of Applicant's response to the restriction requirement mailed on December 23, 2005 and election with traverse of Group II, claims 17-28.

Election/Restrictions

Upon searching, the Examiner found compositions comprising Factor IX and methods of treatment to be coextensive; therefore the requirement for restriction is hereby **withdrawn**.

Specification

The abstract of the disclosure is objected to because the first sentence has no verb. Correction is required. See MPEP § 608.01(b).

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, **or to a publication is improper**. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of treating hemophilic bleeding, does not reasonably provide enablement for prevention of hemophilic bleeding in advance of a hemophilic assault. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. It is noted that the Applicant has asserted on page 6, paragraph 22 of the specification that Factor IX ***appears*** to be sequestered in the lung producing a depot effect, wherein the administration of active weekly or biweekly is sufficient to prevent bleeding up to 2-4 days after administration and that this effect is prophylactic or preventative. The word, "preventing," in claim 14, implies that the practice of the method of claims 14-16 is 100% effective for all patients, human and otherwise. However, aside from Applicant's assertion, no data has been provided to support the implied efficacy of the methods of claims 14-16. It is further noted that no subject has been specified in the practice of said claim, therefore this claim reads on the prevention of hemophilic bleeding in all species wherein hemophilia may occur, which may include such disparate animals as cetaceans, pigs, cobras, camels, birds, and kangaroos, for example.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 17-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17, 19, 20-22, and 24 are confusing because they refer to Factor IX, a protein, as being monomeric. This is confusing because it is well known in the art that proteins are polymeric, as evidenced by the generic synonyms, "polypeptides" or "biological macromolecules." It is unclear how a polymer can be monomeric.

The remaining claims are rejected as depending from a rejected claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 20, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Lechuga-Ballesteros et al. (WO 01/32144; From IDS; "Lechuga").

The limitation regarding the monomeric percentage of Factor IX was given no weight, because it is not possible for a polymeric material, such as a protein, to be monomeric. See the relevant discussion in the above rejection under 35 U.S.C. 112, second paragraph.

Lechuga discloses **dry powder compositions** having improved dispersivity comprising an active agent and a dipeptide or **tripeptide comprising at least two leucyl residues**. These compositions exhibit superior aerosol properties and are preferred for **aerosolized administration** to the lung (title and abstract).

Lechuga discloses that the active agent may be an inorganic or an organic compound, including drugs, which act on systems, including the **blood circulatory system** (pg. 9, lines 12-13 and 16). Specific drugs include Factor VIII or **Factor IX** (pg. 10, line 8). Example 7, beginning on page 44, specifically describes **Factor IX dry powder formulations comprising buffer (i.e. Na Citrate) and trileucine** (see Table 15, for example).

Lechuga discloses that exemplary peptide trimers include, **leu-leu-leu** (i.e. tri-leucine) and that preferred peptides include dileucine and **trileucine** (page 13, lines 5 and 10).

Lechuga discloses that the addition of trileucine to a calcitonin formulation was effective to nearly double the ED value (emitted dose value) of the resulting powder (Example 4).

Lechuga discloses that the dry powders are preferably prepared by spray drying and active agents having a water solubility of at least about 0.10 mg/ml can be spray dried from aqueous solution (pg. 17, lines 7 and 12-14). Where the active agent is hydrophobic, it can be dissolved in an organic solvent or co-solvent system, the hydrophilic components (e.g. leucyl-containing peptides and optional excipients) are at least partially dissolved in the same cosolvent system, and the resulting solution is spray dried. Dry powders may also be prepared by combining aqueous solutions or suspensions of formulation components and spray drying simultaneously in a spray dryer (pg. 18, lines 4-10 and 24-26).

Lechuga discloses that the compositions may additionally comprise one or more pharmaceutical excipients suitable for pulmonary administration in amounts ranging from **0.01% to about 95% by weight** (pg. 14, lines 24-28). The compositions may also include a **buffer or a pH-adjusting agent**, wherein representative buffers include organic acid salts (pg 16, lines 5-9). The compositions may be in powdered form or may be flowable liquids (pg. 16, lines 29-30).

The dry powder particles have a mass median diameter (MMD) of less than about 20 microns, most preferably less than about 4 microns and usually in the range of 0.1 microns to 5 microns in diameter. The powder particles also have a mass **medium aerodynamic diameter (MMAD) less than about 10 microns, most preferably between 1.5 to 3.5 microns**. These powders generally have **moisture content below 20%, usually below 10%, and preferably below 6%**. Such low moisture-containing solids tend to exhibit a greater stability upon packaging and storage (pg. 20, lines 3-7, 12-17, 26-29).

Lechuga discloses that the compositions generally have **emitted doses (ED) usually greater than 40%, and often greater than 55%**. The incorporation of di-leucyl or tripeptide into a variety of active agent formulations was effective, in all cases, to increase the ED value of the resultant compositions, and in some cases doubling the ED value (pg. 21, lines 1-8; See also Table 9 on page 38). Tri-leucine was more effective in enhancing powder dispersibility than leucine (pg. 39, lines 8-9).

Lechuga discloses that the dry powder compositions are also characterized by a fine particle dose or fraction (FPD or FPF), which describes the percentage of powder having an aerodynamic diameter less than 3.3 micron. The powder compositions of Lechuga's invention possess **FPF values ranging from about 35% to 85%**, and are thus extremely effective in reaching the regions of the lung, including the alveoli (pg. 21, lines 10-17).

Lechuga discloses that the formulations of his invention may be delivered using any suitable **dry powder inhaler (DPI), an inhaler device utilizing the patient's inhaled breath** as a vehicle to transport the dry powder drug to the lungs. When administered with a DPI, the powder is contained in a receptacle having a puncturable lid or other access surface, **preferably**

a blister package or cartridge, where the receptacle may contain a single dosage unit or multiple dosage units (pg. 22, lines 20-23 and 27-30).

Lechuga discloses that the compositions of his invention are useful when administered pulmonarily in a therapeutically effective amount to a mammalian subject for treating or preventing any condition responsive to the administration of an active agent (e.g. hemophilia treated with Factor IX) (pg. 24, lines 10-13).

The Examiner contends that the compositions disclosed by the prior art inherently have an after-aerosolization/pre-aerosolization activity that is at least 80%, because the prior art discloses all the components of the stated composition, in the same form, and with overlapping FPF and MMAD ranges.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6-10, 12-16, 18, 19, 21, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lechuga-Ballesteros et al. (WO 01/32144; From IDS; "Lechuga").

The limitation regarding the monomeric percentage of Factor IX was given no weight, because it is not possible for a polymeric material, such as a protein, to be monomeric. See the relevant discussion in the above rejection under 35 U.S.C. 112, second paragraph.

The disclosures/teachings of Lechuga have been set forth above.

Lechuga does not explicitly teach or disclose anticipatory methods of treating hemophilia, preventing bleeding associated with a hemophilic assault as stated in the instant claims, or specify the treatment of hemophilia B.

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention that Lechuga implicitly teaches methods of treating hemophilia by administration of Factor IX, because Factor IX is a well-known active agent used in the treatment of Hemophilia B (See for example Lacy, C.; Armstrong, L. L.; Lipsy, R. J.; Lance, L. L. *Drug Information Handbook*, Lexi-Comp, Inc.: Cleveland, **1993**, pp 363-364.) and is one of the active agents that Lechuga teaches may be delivered using any suitable dry powder inhaler

(DPI), an inhaler device utilizing the patient's inhaled breath as a vehicle to transport the dry powder drug to the lungs. It would have been apparent to a skilled artisan that the use of a DPI to delivery Lechuga's compositions results in the aerosolization of the powder formulation and entails the step of inhalation. The step of exhalation would have been obvious to a person of ordinary skill in the art at the time of the instant application, because every inhalation by a living respiring subject is followed by an exhalation, as evidenced by observing one's own breathing. Therefore, the steps of the method of treating hemophilia as stated by the Applicant are conventional steps and/or are obvious over the teachings of the prior art.

Regarding claim 14 and its depending claims, it would have been obvious to a skilled artisan that the administration of the dry powder compositions taught by Lechuga would have resulted in the stated method of preventing hemophilic bleeding in advance of a hemophilic assault, because the composition taught by Lechuga has the same components as that claimed by Applicant and the treatment of the hemophilia is a consequence of the delivery of the active composition by inhalation. Claims 15 and 16 further limit claim 14 by varying the dosage frequency (i.e. total dosage) of the active formulation administered to a subject in need thereof. The optimization of the amount of an active composition delivered and the frequency of its administration to a subject is clearly a result effective parameter that a person of ordinary skill in the art would routinely modify to obtain the desired result of treating the subject's ailment. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal dosage amount and dosage frequency to achieve the desired results. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization

of dosage amounts and frequency would have been obvious at the time of applicant's invention. Regarding the required absence of ethanol in the formulations, the Examiner contends that the term "dry" implies the absence of liquid (i.e. solvent, such as alcohol). Furthermore, Lechuga teaches that the dry powders may be prepared by spray drying aqueous solutions. The word "aqueous" does not imply the use of alcohol.

Claims 5-7, 11-13, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lechuga-Ballesteros et al. (WO 01/32144; From IDS; "Lechuga") as applied to claims 1-4, 6-10, 12-16, 18, 19, 21, 22, and 24 above, and further in view of Russell, K. E. et al. "Intratracheal Administration of Recombinant Human Factor IX (BENEFIX^{TM}) Achieves Therapeutic Levels in Hemophilia B Dogs" *Thromb. Haemost.* 2001, *85*, 445-449 (IDS).

The limitation regarding the monomeric percentage of Factor IX was given no weight, because it is not possible for a polymeric material, such as a protein, to be monomeric. See the relevant discussion in the above rejection under 35 U.S.C. 112, second paragraph.

The disclosures/teachings of Lechuga have been set forth above.

Lechuga lacks the teaching of formulations using recombinant Factor IX.

Russell teaches that inhalation therapy would provide a "needle-free" route of administration of F.IX if therapeutic levels could reach the systemic circulation from the airways. Administration of Factor IX via the respiratory tract is desirable because (1) the active only needs to travel a short distance between the pulmonary epithelium and systemic circulation; (2) the small airways and alveoli provide a large surface area highly permeable and absorptive membrane; (3) the alveoli harbor a huge vascular bed through which several liters of blood flow

per minute; and (4) the lung has relatively low enzymatic activity and airway mucous, which minimizes the likelihood of drug degradation during transit to the systemic circulation (Introduction, 2nd paragraph, bottom right column, top left column, pg 445).

Russell teaches that the data presented in his paper demonstrates that biologically active rF.IX (recombinant Factor IX) can reach the systemic circulation when give IT (intratracheally). Aerosolization of rF.IX may provide a needle-free therapeutic option for delivery of rF.IX to hemophilia B patients (pg 445, "Summary", right column).

Russell et al. concluded that they had demonstrated that intratracheal administration of rF.IX to hemophilia B dogs resulted in systemic circulation and achieved detectable and therapeutic levels beginning between 2 and 8h post infusion and lasting at least 72 h (pg. 448, left column, last paragraph before the Addendum).

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention to combine the teachings of Lechuga and Russell, because both teach compositions comprising Factor IX administered to the airways (i.e. via inhalation). A skilled artisan would have had a reasonable expectation of success upon combination of the prior art teachings because Russell demonstrated that intratracheal administration of rF.IX to hemophilia B dogs resulted in systemic circulation and achieved detectable and therapeutic levels beginning between 2 and 8h post infusion and lasting at least 72 h.

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lechuga-Ballesteros et al. (WO 01/32144; From IDS; "Lechuga") as applied to claims 1-4,

6-10, 12-16, 18, 19, 21, 22, and 24 above, and further in view of DeFrees et al. (US 2004/ 0137557).

The limitation regarding the monomeric percentage of Factor IX was given no weight, because it is not possible for a polymeric material, such as a protein, to be monomeric. See the relevant discussion in the above rejection under 35 U.S.C. 112, second paragraph.

The teachings of Lechuga have been set forth above.

Lechuga lacks the teaching of formulations comprising glycosylated Factor IX.

DeFrees teaches that many naturally occurring peptides are termed "glycopeptides." The glycosylation pattern variability has enormous implications for the function of that peptide, impacting various characteristics of the peptide, including biological half-life and antigenicity of the peptide in a cell or organism. The alteration of one or more of these characteristics greatly affects the peptide efficacy in its natural setting and as a therapeutic agent in situations [0001].

DeFrees teaches that the **administration of glycosylated** and non-glycosylated **peptides** for engendering a particular physiological response is well known in the medicinal arts. The immunogenic nature of most peptides has limited the use of therapeutic peptides. The problems inherent in peptide therapeutics are recognized in the art, and various methods of eliminating the problems have been investigated, including the attachment of synthetic polymers to the peptide backbone [0009].

DeFrees teaches that polyethylene glycol ("PEG") is an exemplary polymer that has been conjugated to peptides. The use of PEG to derivatize peptide therapeutics has been demonstrated to reduce the immunogenicity of the peptides and prolong the clearance time from the circulation

[0010]. One mode of attaching PEG to peptides is through the non-specific oxidation of glycosyl residues on a peptide [0013].

DeFrees teaches a method of forming a conjugate between a **Factor IX peptide** and a modifying group, wherein the modifying group is covalently attached to the Factor IX peptide **through an intact glycosyl linking group**, the Factor IX peptide comprising a glycosyl residue [0252].

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention to combine the teachings of Lechuga and DeFrees to obtain a glycosylated Factor IX peptide for use in Lechuga's aerosolizable formulations, because glycosylation is well known in the medical arts for engendering a particular physiological response. A skilled artisan would have had a reasonable expectation of success upon combination of the prior art teachings, because glycosylation of peptides is well known in the medical arts, the attachment of PEG to a peptide has been shown to reduce peptide immunogenicity, and PEG has been attached to a peptide via a glycosyl moiety.

Regarding the amount of buffer stated in claim 27, Lechuga teaches that his compositions may one or more pharmaceutical excipients suitable for pulmonary administration in amounts ranging from 0.01% to about 95% by weight and may also comprise buffer/pH adjusting agents. A skilled artisan at the time of the instant application would consider buffer an excipient. Furthermore, the amount of a specific ingredient in a composition is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal

amount of each ingredient needed to achieve the desired results. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of ingredient amounts would have been obvious at the time of applicant's invention.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11, 13-17, 22, and 39 of copending Application No. 10/313,343 (copending '343) in view of Platz et al., U.S. Patent No. 6,372,258 (USPN '258). Although the conflicting claims are not identical, they are not patentably distinct from each other because they are overlapping in scope and claim compositions comprising an active agent (e.g. Factor IX (claim 22 of copending '343), excipient

(claim 8 of copending '343), tri-peptide (e.g. tri-leucine, claims 3, 13, and 14 of copending '343), dry powder form (claim 1 of copending '343), and a method of treating a disease (e.g. treatment of hemophilia with Factor IX). The copending '343 lacks a teaching of emitted doses and fine particle fraction (FPF). This deficiency is partially cured by the teachings of Platz et al. Platz teaches that it is preferable that greater than about 60% of the dose is. Platz is silent with regards to fine particle fraction (FPF), which is conventionally defined as the percentage of particles having a MMAD below a specified value. It would have been obvious to a skilled person in the art at the time of the instant invention to optimize the FPF of a given dry powder composition. The physical characteristics (e.g. physical/aerodynamic size and shape) of particulate compositions are clearly result specific parameters that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal physical particle characteristics (e.g. MMAD, FPF, MMD, etc.) of a particulate composition needed to achieve the desired results. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of ingredient amounts would have been obvious at the time of applicant's invention.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3, 6, 8, 9, and 12-19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 22, 23, 27-31, 37, 40, and 41 of copending Application No. 10/313,961 (copending '961) in view of Lechuga-Ballesteros et al. (WO 01/32144; From IDS; "Lechuga").

Although the conflicting claims are not identical, they are not patentably distinct from each other because they are overlapping in scope and claim compositions comprising a Factor IX active agent, excipient (claim 23 of copending '961), dry particulate form (claim 22 of copending '961), and a method of treating a disease (e.g. treatment of hemophilia with Factor IX). The copending '961 lacks the teaching of emitted dose amounts. This deficiency is cured by the teachings of Lechuga, which have been set forth above. Copending '961 specifies in claim 41 that the disease state treated is hemophilia B. The term hemophilia encompasses "hemophilia B," and furthermore, it is known in the art that Factor IX is specifically used to treat hemophilia B (see for Example, Table 1 in Platz et al. U.S. Patent No. 6,372,258).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 17-19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 41, 42, 54-58, 61-65, and 67 of copending Application No. 10/985,509 (copending '509) in view of Platz et al., U.S. Patent No. 6,372,258 (USPN '258). Although the conflicting claims are not identical, they are not patentably distinct from each other because they are overlapping in scope and claim compositions comprising an active agent (e.g. Factor IX (claim 64 of copending '509), excipient (claim 57 of copending '509), tri-peptide (e.g. tri-leucine, claims 41-42, 61m and 62 of copending '509), dry powder form (claim 66 of copending '509), and a method of treating a disease (e.g. treatment of hemophilia with Factor IX). The copending '509 lacks a teaching of emitted doses and MMAD, and this deficiency is cured by the teachings of Platz et al. Platz

teaches that it is preferable that greater than about 60% of the dose is delivered and that the dry powders have a MMAD between 1.5-4.5 microns. Platz is silent with regards to fine particle fraction (FPF), which is conventionally defined as the percentage of particles having an MMAD value below a specified value. It would have been obvious to a skilled person in the art at the time of the instant invention to optimize the FPF of a given dry powder composition. The physical characteristics (e.g. size and shape) of particulate compositions are clearly result specific parameters that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal physical particle characteristics (e.g. MMAD, FPF, MMD, etc.) of a particulate composition needed to achieve the desired results. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of ingredient amounts would have been obvious at the time of applicant's invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Claims 1-28 have been rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on (571) 272-0887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James H. Alstrum-Acevedo, Ph.D.
Examiner

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